

Onset of depressive symptomatology in a sample of university students

Omar Enzo Santangelo,¹

Sandro Provenzano,¹ Dario Piazza,²

Alberto Firenze¹

¹Department of Sciences for Health Promotion and Mother and Child Care “G. D’Alessandro”, University of Palermo; ²Unità di Staff Rischio Clinico e Qualità A.O.U.P. “P. Giaccone”, Palermo, Italy

Abstract

The aim of the study was to evaluate depressive symptomatology within the student population of the University of Palermo (Italy). An anonymous online questionnaire was provided to the students of the University of Palermo. The first section investigated demographic and social data, while in the second section the QIDS-SR16 (Quick Inventory of Depressive Symptomatology Self-Report) test was administered. 539 students (68.3% female) gave informed consent and completed the questionnaire. Considering as a dependent variable: *Depressive symptomatology moderate-severe-very severe*, the statistically significant independent variables associated are *I don't live with my family* (aOR 1.63, 95% CI 1.01-2.63, $P=0.043$), *I currently smoke* (aOR 1.55, 95% CI 1.01-2.39, $P=0.048$) and *Low perceived health status* (aOR 4.14, 95% CI 2.73-6.28, $P<0.001$). Smoking is associated with an increased risk of developing a high-grade depressive symptomatology. Family plays a crucial role in decreasing the risk of moderate, severe or very severe symptoms.

Introduction

The university period may represent a moment in which the mental well-being of students is subjected to stress with relative predisposition to the development of diseases related to mood disorders.¹ These can lead to the onset of depressive and anxiety symptoms, abuse of alcoholic beverages and to a reduction of academic achievement.² Depressive symptoms are negatively correlated with emotional stability and positively correlated with vulnerability to stress factors, representing a common health problem for students all over the world.³ Data from longitudinal studies show that these

symptoms persist for a long period of time if students do not receive appropriate help,⁴ it is also shown that mood disorders are the psychiatric conditions most frequently encountered in young adults.⁵ Psychological morbidity in undergraduate students represents a neglected public health problem. In terms of life quality, understanding the impact of this phenomenon on one's educational attainment and prospective occupational success is very important.⁶ In this context we insert our observational study, in order to focus attention on the mood disorders of university students, to improve the quality of life and to prevent the future development of pathologies. The objective of the study was to estimate the prevalence and examine the socio-demographic correlates of depressive disorder among university students in Palermo, Italy.

Materials and Methods

In the months of September and October 2017, an anonymous online survey was provided, accompanied by informed consent, sent to 1000 students enrolled in the mailing list of the Regional Authority for the Right to University Study (ERSU) of the University of Palermo.

Institutional ethical approval was not required, the data were provided and analyzed in anonymous and aggregated form. Administrative approvals were received from President of ERSU of the University of Palermo. We administered an anonymous online survey accompanied by informed consent, only students who consented to participate took part in the study. Those who did not want to participate were free to leave the survey or not complete the questionnaire.

In the first section of the questionnaire, personal information was requested, relating to the course of study undertaken, the perception of the economic and health status and voluptuous habits (see Table 1 with the related dichotomizations). In the second part of the survey the QIDS-SR16 (Quick Inventory of Depressive Symptomatology Self-Report) questionnaire was administered, a self-report tool that allows to evaluate the severity of depressive symptomatology by administering 16 items with four possible answers to which a score ranging from 0 to 3 is attributed.

The QIDS-SR16 was developed by Dr A. John Rush, MD. and is derived from the 30-item Inventory of Depressive Symptomatology (IDS), which has seen many years of use at the University of Texas Southwestern Medical School.⁷

Correspondence: Sandro Provenzano, Dipartimento di Scienze per la Promozione della Salute e Materno Infantile “G. D’Alessandro”, Via del Vespro, 129, 90127 Palermo (PA), Italy.
Tel.: +39.0916553641 - Fax: +39.091.6553697.
E-mail: provenzanosandro@hotmail.it

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Questions in the QIDS-SR16 include: sleep disturbance (initial, middle, and late insomnia or hypersomnia), sad mood, decrease/increase in appetite/weight, concentration, self-criticism, suicidal ideation, interest, energy/fatigue, psychomotor agitation/retardation.

Based on the score the subjects are assigned to one of the following categories: 0-5 no depressive symptomatology, 6-10 mild, 11-15 moderate, 16-20 severe and ≥ 21 very severe depressive symptomatology. The QIDS-SR16 has highly acceptable psychometric properties, which supports the usefulness of this brief rating of depressive symptom severity in both clinical and research settings.⁷

For all qualitative variables absolute and relative frequencies have been calculated; categorical variables were analyzed by Pearson's Chi-square test (χ^2). A multivariable logistic regression was performed, considering it as a dependent variable *depressive symptomatology moderate-severe-very severe*, in order to evaluate the role of the variables in the first section of the questionnaire. The statistical significance level chosen for all analyzes was 0.05. The results were analyzed using the STATA statistical software version 14. Results are expressed as adjusted Odds Ratio (aOR) with 95% Confidence Intervals (95% CI).

Results

539 students agreed to the informed consent and completed the questionnaire. The average age of the sample is 22.65 years ($SD \pm 2.95$), 68.27% of the interviewees are women, 98.89% were born in Italy, 75.51% are single, 56.03% report to attend a scientific degree course, 61.78 were off-site students, 29.13% live with their families, 89.42% report that they currently have a job, 91.65% report a low perceived economic status, 28.57% currently smoke, 59.93% do not perform regularly exercise, 41.93% report a low perceived health status, 31.73% of the interviewees have moderate, severe or very severe depressive symptoms (Table 1). Regarding bivariate analysis (Table 2), only statistically significant results are reported in this section. 30.70% of unemployed students have moderate, severe or very severe depressive symptoms compared to 40.34% of those currently in employment. To the question: *Do you currently smoke?* 43.51% of smokers report moderate-severe-very severe depressive symptoms, compared to 27.01% of non-smokers. 49.56% of those interviewed who perceive a low state of health have moderate-severe-very severe depressive symptoms compared to 18.86% of

Table 1. Description of the sample.

Variables	Dichomization	N (%)
Age class	>22 years old	221 (41.00)
	≤22 years old	318 (59.00)
Gender	Female	368 (68.27)
	Male	171 (31.73)
Country of birth	Italy	533 (98.89)
	Other	6 (1.11)
Are you engaged or single?	Engadged	132 (24.49)
	Single	407 (75.51)
What is your field of study?	Scientific	302 (56.03)
	Humanistic	237 (43.97)
Are you a student off-site or in-site?	In-site	206 (38.22)
	Off-site	333 (61.78)
Do you live with your family?	Yes	382 (70.87)
	No	157 (29.13)
Do you have a job right now?	Yes	57 (10.58)
	No	482 (89.42)
Perceived economic status	Medium-high	45 (8.35)
	Low	494 (91.65)
Do you currently smoke?	No	385 (71.43)
	Yes	154 (28.57)
Do you perform regular physical activity?	Yes	216 (40.07)
	No	323 (59.93)
Perceived health status	Medium-high	313 (58.07)
	Low	226 (41.93)
Depressive symptomatology	None	161 (29.87)
	Mild	207 (38.40)
	Moderate	119 (22.08)
	Severe	45 (8.35)
	Very severe	7 (1.30)

Table 2. Bivariate associations between the depressive symptomatology and the variables of the first section of questionnaire. Used Pearson's Chi-square test.

Variables		Depressive symptomatology (%)					p-value
		None	Mild	Moderate	Severe	Very Severe	
Age class	>22 years old	70 (31.67)	85 (38.46)	47 (21.27)	18 (8.14)	1 (0.45)	0.626
	≤22 years old	91 (28.62)	122 (38.36)	72 (22.64)	27 (8.49)	6 (1.89)	
Gender	Male	57 (33.33)	58 (33.92)	39 (22.81)	14 (8.19)	3 (1.75)	0.594
	Female	104 (28.26)	149 (40.49)	80 (21.74)	31 (8.42)	4 (1.09)	
Country of birth	Italy	159 (29.83)	205 (38.46)	117 (21.95)	45 (8.44)	7 (1.31)	0.910
	Other	2 (33.33)	2 (33.33)	2 (33.33)	0 (0.00)	0 (0.00)	
Are you engaged or single?	Engadged	46 (34.85)	52 (39.39)	23 (17.42)	11 (8.33)	0 (0.00)	0.241
	Single	115 (28.26)	155 (38.08)	96 (23.59)	34 (8.35)	7 (1.72)	
What is your field of study?	Scientific	87 (28.81)	115 (38.08)	72 (23.84)	26 (8.61)	2 (0.66)	0.487
	Humanistic	74 (31.22)	92 (38.82)	47 (19.83)	19 (8.02)	5 (2.11)	
Are you a student off-site or in-site?	In-site	69 (33.50)	79 (38.35)	45 (21.84)	12 (5.83)	1 (0.49)	0.221
	Off-site	92 (27.63)	128 (38.44)	74 (22.22)	33 (9.91)	6 (1.80)	
Do you live with your family?	Yes	122 (31.94)	152 (39.79)	75 (19.63)	30 (7.85)	3 (0.79)	0.058
	No	39 (24.84)	55 (35.03)	44 (28.03)	15 (9.55)	4 (2.55)	
Do you have a job right now?	Yes	8 (14.04)	26 (45.61)	12 (21.05)	10 (17.54)	1 (1.75)	0.012
	No	153 (31.74)	181 (37.55)	107 (22.20)	35 (7.26)	6 (1.24)	
Perceived economic status	Medium-high	14 (31.1)	21 (46.67)	9 (20.00)	1 (2.22)	0 (0.00)	0.428
	Low	147 (29.76)	186 (37.65)	110 (22.27)	44 (8.91)	7 (1.42)	
Do you currently smoke?	No	127 (32.99)	154 (40.00)	77 (20.00)	25 (6.49)	2 (0.52)	<0.001
	Yes	34 (22.08)	53 (34.42)	42 (27.27)	20 (12.99)	5 (3.25)	
Do you perform regular physical activity?	Yes	76 (35.16)	79 (36.57)	47 (21.76)	13 (6.02)	1 (0.46)	0.091
	No	85 (26.32)	128 (39.63)	72 (22.29)	32 (9.91)	6 (1.86)	
Perceived health status	Medium-high	128 (40.89)	126 (40.26)	48 (15.34)	9 (2.88)	2 (0.64)	<0.001
	Low	33 (14.60)	81 (35.84)	71 (31.42)	36 (15.93)	5 (2.21)	

those who perceive a medium-high state of health. Table 3 shows the adjusted Odds Ratio (aOR), considering as a dependent variable: *Depressive symptomatology moderate-severe-very severe*, the statistically significant independent variables associated are *I don't live with my family* (aOR 1.63, 95% CI 1.01-2.63, $P=0.043$), *I currently smoke* (aOR 1.55, 95% CI 1.01-2.39, $P=0.048$) e *Low perceived health status* (aOR 4.14, 95% CI 2.73-6.28, $P<0.001$); each independent variable is adjusted for all the other independent variables in Table 3.

Discussions and Conclusions

Similarly to what has already emerged in the literature from a study carried out at the University of Palermo, about 32% of students have moderate, severe and very severe depressive symptoms.⁸ There were no statistically significant differences related to gender and field of study regarding the severity of depressive symptomatology. The results of the study regarding the prevalence of severe symptomatology show values that can be overlapped by European Countries.⁹

The multivariable analysis shows that

those who perceive a low state of health are assigned to reference categories with greater risk for the onset of depressive symptoms. This result is reflected in the fact that those who perceive a low state of health are subjected to stress that can lead over time to the development of depressive symptoms. Smoking is shown to be a factor that increases the likelihood of developing depressive symptomatology;¹⁰ in our study smokers are more likely to have moderate, severe or very severe symptoms than those who do not smoke (Table 3). Finally, it emerges that not living with one's own family increases the risk of incurring depressive symptoms. In fact, a subject isolated from his affections become easily vulnerable to lack of help that contributes to minimizing the onset of symptoms.

The study has limitations: it is a cross-sectional study, several independent variables could not be evaluated for the cause and effect associations; the questionnaire included only a limited number of questions and probably some factors that could be associated with depressive symptomatology were not taken into consideration; moreover, being addressed to students of a single University campus, it does not allow to generalize the results to other Universities of

the Regional or National territory despite the large number of the sample being relevant compared to other cognitive surveys on the treated topics present in the literature.¹¹

It is therefore essential that prevention interventions are an integral part of coherent local, Regional and National strategies based on evidence of agreed effectiveness, in this context fits the activity of the University Medical Outpatient Department (*Ambulatorio Medico Universitario* in Italian), born from an initiative of the University of Palermo in partnership with the University Polyclinic Hospital *Paolo Giaccone* of Palermo, which offers a multi-disciplinary outpatient medical assistance service to University students including psychological and psychiatric counseling. Mental health promotion campaigns for the assessment of the appearance of depressive symptomatology with periodic and timely surveys through dedicated surveys, organization of seminars on youth issues for students and active support from physicians and psychologists present in the University structures could be the measures to be taken adopt in consideration of the results achieved in our study.

Table 3. Multivariable logistic regression. Adjusted Odds Ratio are presented. Each independent variable is adjusted for all the other independent variables.

Independent Variables		Depressive symptomatology (moderate-severe-very severe)	
		aOR (95% CI)	p-value
Age class	>22 years old	1	
	≤22 years old	1.21 (0.81-1.83)	0.357
Gender	Male	1	
	Female	0.98 (0.63-1.52)	0.926
Country of birth	Italy	1	
	Other	0.70 (0.11-4.44)	0.702
Are you engaged or single?	Engadged	1	
	Single	1.35 (0.83-2.20)	0.229
What is your field of study?	Scientific	1	
	Humanistic	0.74 (0.48-1.13)	0.163
Are you a student off-site or in-site?	In-site	1	
	Off-site	0.89 (0.56-1.41)	0.626
Do you live with your family?	Yes	1	
	No	1.63 (1.01-2.63)	0.043
Do you have a job right now?	Yes	1	
	No	0.62 (0.33-1.15)	0.128
Perceived economic status	Medium-high	1	
	Low	1.55 (0.71-3.40)	0.269
Do you currently smoke?	No	1	
	Yes	1.55 (1.01-2.39)	0.048
Do you perform regular physical activity?	Yes	1	
	No	0.90 (0.59-1.38)	0.628
Perceived health status	Medium-high	1	
	Low	4.14 (2.73-6.28)	<0.001

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